1. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{1456}{13}}$$

A. Rational

B. Irrational

C. Integer

D. Not a Real number

E. Whole

---

2. Simplify the expression below and choose the interval the simplification is contained within.

$$20 - 3^2 + 8 \div 5 * 10 \div 1$$

A. $[11.16, 17.16]$

B. $[44, 55]$

C. $[26, 29]$

D. $[28.16, 35.16]$

E. None of the above

---

3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-9 - 5i)(-8 - 10i)$$

A. $a \in [114, 125]$ and $b \in [50, 53]$

B. $a \in [114, 125]$ and $b \in [-51, -49]$

C. $a \in [17, 23]$ and $b \in [-132, -126]$

D. $a \in [70, 74]$ and $b \in [50, 53]$

E. $a \in [17, 23]$ and $b \in [129, 132]$

4. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(4 + 7i)(-9 + 6i)$$

A. $a \in [-37, -30]$ and $b \in [39.9, 42.2]$

B. $a \in [4, 7]$ and $b \in [-89.3, -86.1]$

C. $a \in [-83, -74]$ and $b \in [-40.8, -38.1]$

D. $a \in [-83, -74]$ and $b \in [38.8, 41.8]$

E. $a \in [4, 7]$ and $b \in [86.5, 89.6]$

5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{1040}{0}} + \sqrt{99}i$$

A. Irrational

B. Pure Imaginary

C. Nonreal Complex

D. Not a Complex Number

E. Rational

6. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{625}} + \sqrt{8}i$$

A. Not a Complex Number

B. Irrational

C. Nonreal Complex

D. Rational

E. Pure Imaginary

---

7. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{5}{0}}$$

A. Whole

B. Rational

C. Irrational

D. Integer

E. Not a Real number

---

8. Simplify the expression below and choose the interval the simplification is contained within.

$$4 - 6 \div 19 * 5 - (20 * 13)$$

A. $[-257.17, -255.04]$

B. $[-228.8, -228.39]$

C. $[263.26, 264.85]$

D. $[-258.68, -256.21]$

E. None of the above

---

9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 + 55i}{-7 + 6i}$$

A. $a \in [3, 5]$ and $b \in [-6, -5]$

B. $a \in [3, 5]$ and $b \in [-440, -438]$

C. $a \in [-5, -3.5]$ and $b \in [-4, -3]$

D. $a \in [-2, 0.5]$ and $b \in [8, 10]$

E. $a \in [266.5, 269]$ and $b \in [-6, -5]$

---

10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-36 - 22i}{5 + 6i}$$

A. $a \in [-312.5, -311.5]$ and $b \in [0, 2.5]$

B. $a \in [-5.5, -3.5]$ and $b \in [105, 106.5]$

C. $a \in [-5.5, -3.5]$ and $b \in [0, 2.5]$

D. $a \in [-8.5, -6.5]$ and $b \in [-5, -2.5]$

E. $a \in [-2.5, 0]$ and $b \in [-6, -4.5]$
